

An integrative literature review of motivational interviewing and co-active life coaching as potential interventions for positive behaviour change in adolescents

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Abstract

This integrative review of the literature synthesizes findings of previous research studies about the impact of Motivational Interviewing (MI) as an intervention to positive behavior change in adolescents who engage in risky behavior, and appraises current information about the possibility of Motivational Interviewing-via-Co-Active Life Coaching (MI-via-CALC) as an intervention to enhance self-efficacy and motivation in at-risk youth. Additionally, implications for practice and further research in relation to the impact of MI and MI-via-CALC as interventions to positive behavior change in adolescents are addressed.

Key words: motivational interviewing; motivational interviewing-via-co-active life coaching; treatment fidelity; perceived self-efficacy; subjective norm

Introduction

An integrative literature review (ILR) permits the inclusion of assorted methods, experimental and non-experimental studies and data from theoretical and empirical literature to augment a holistic understanding of a particular topic. As a result, a well-executed ILR may contribute to the development of theory and have applicability to practice, and potentially inform research and policy (Whittemore & Knafl, 2005). An ILR gleans information about a specific topic by identifying, analyzing and synthesizing “results of independent studies on the same subject” (Tavares de Souza, Dias da Silva & de Carvalho, 2010, p. 103), and presents a fully integrated report of key concepts and overall conclusions about that subject (Ganong, 1987). Further, an ILR examines previous literature “with a particular lens defined by the articles objectives” (Torraco, 2005, p. 361), and does not scrutinize every feature of previous research (Torraco, 2005). This ILR will examine ten research articles that share in common Motivational Interviewing (MI) as a solution-focused intervention for positive behavior change in adolescents. Also reviewed will be eight articles that focus on Motivational Interviewing-via-Co-Active Life Coaching (MI-via-CALC) as a potential intervention for positive personal behavior change in at-risk adolescents.

Research Questions/Objectives

Upon examination of the literature, the questions addressed by the review are: 1) In relation to the concepts of treatment fidelity and counselor/client rapport, self-efficacy, and subjective norm, what is the potential of MI to positive behavior change in adolescents engaging in risk behavior; 2) What are the

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implications for practice, theory development, and research of CALC as a motivational intervention in the facility of perceived self-efficacy and positive behavior change in at-risk adolescents?

Rationale

The persistence of some youth to unhealthy behavior suggests that further investigation of effective interventions is a worthwhile undertaking. Interventions that reduce risky behavior in youth usually have a positive effect on self-efficacy beliefs (Schwarzer & Luszczynska, 2005). From this perspective, MI and MI-via-CALC will be investigated as possible behavior interventions for at-risk youth.

Adolescent At-Risk Behavior

Adolescent at-risk behavior comprises many domains, including individual, social, and community (Sullivan, Childs & O'Connell, 2010). A faction of youth is jeopardizing their mental and physical health by making poor and often debilitating choices. When assessed by conventional health markers, North American adolescence is usually a healthy time of life. Mortality and morbidity in this age group are principally caused by behavior that place teenagers at risk of long-term negative health outcomes or death (Aronowitz, 2005). The risk of withdrawing from school involvement, participating in unprotected sex, drug and alcohol abuse, drinking and driving, engaging in criminal and violent acts can cause more than physical harm.

Problem Behaviour Syndrome

Jessor points to problem behaviour syndrome as a social-psychological framework drawn from Rotter's social learning theory (Jessor, 2001). He postulates, "Problem behaviour proneness in the perceived environment system includes low parental disapproval of problem behavior, high peer approval of problem behavior, high peer models for problem behavior, low parental controls and support, low peer controls, low compatibility between parent and peer expectations, and low parent (relative to peer) influence" (Jessor, 2001, p. 2). This concept aligns with Bandura's premise of perceived self-efficacy and motivation (Bandura, 1989) as well as the subjective norm, as explicated by Ajzen (1991). Description of the theories of Bandura and Ajzen follows. Jessor explains that problem behaviour is more likely in youth who do not value education and are critical of society and themselves. Further, he states that youth who are alienated and experience low self-esteem and values are prone to engagement in problem behaviour. Youth who are involved in one problem behaviour are likely to become engaged in various problem behaviours because of the social norms of the group, defiance of standard ways of behaving, and the lack of parental control (Jessor, 2001).

Theoretical Framework of this Study

During the initial stages of the review process "the reviewer should delineate the relationships between the variables under study" (Russell, 2005, p. 3). Throughout the literature search, a theoretical framework may act as a guide to fittingness of results in the process of knowledge development (Russell, 2005). In this ILR, motivation vis-à-vis self-efficacy, subjective norm, treatment fidelity and the counselor/client relationship will be conceptual considerations when examining the connection of literature.

Self-Efficacy and Motivation

In his premise of Social Cognitive Theory, Bandura (1989) points to development as life long, and his analysis focuses on the psychosocial functioning of the individual. He postulates that people will be

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self-motivated only if they perceive self-efficacy to goal attainment. That is, people who doubt their abilities may become easily discouraged by the possibility of failure; however, those who succeed in challenges that are perceived as attainable, may be more likely to progress steadily to the desired end goal. The benefit of accomplishment at the initial stages of an endeavor is critical to self-efficacy.

Bandura clarifies that people become interested in engaging in goal attainment when they experience a sense of satisfaction and pride; self-motivation is the outcome. As people face obstacles, amalgamated efforts by trusted others to persuade and support are helpful to their judgment of self-efficacy.

Theory of Planned Behavior and Intention

In his theory of planned behavior, Isek Ajzen refers to a person's intention to perform a behavior as a pivotal influence on motivation (Ajzen, 1991). He postulates that an individual's perception of the outcome of a performed behavior has an impact on attitude; that is, if the outcome is predicted to be positive, the attitude toward the performance will be positive. In addition, if people who are important to the individual see an action as meaningful, the individual will be motivated to perform the act. This subjective norm (Ajzen, 1988; Ajzen, 1991) is deemed a powerful indicator of intent to perform an action (Irwin & Morrow, 2005). Finally, intention and motivation to complete an action rests on the individual's discernment of its difficulty and his or her ability to successfully complete the task (Ajzen, 1988). This ILR will focus on the importance of perceived self-efficacy and parental involvement as the subjective norm.

Motivational Interviewing (MI)

MI has been described as a goal directed, "client-centered counseling style for eliciting behavior change by helping clients explore and resolve ambivalence" (Rollnick & Miller, 1995, p. 236). In the MI relationship, the counselor deliberately directs the client in the pursuit of positive behavior change (Rollnick & Miller, 1995) in an empathic and non-confrontational approach. Further, MI does not involve persuasion or advice giving. This approach, then, "would appear to be a natural fit for adolescents (Flaherty, 2008, p. 118), who value autonomy and independent decision making (Naar-King & Suarez, 2011).

Rollnick and Miller (1995) explain that the spirit of MI includes the following: motivation to change comes from the client and is not imposed by others; the client is responsible for resolving ambivalence; direct persuasion does not resolve ambivalence, it often increases resistance to change; the counseling style is quiet and elicits change behavior; the counselor facilitates the client's examination of ambivalence; readiness to change must come from the client; the therapeutic relationship is a partnership. The MI therapist demonstrates empathy, which comprises reflective listening, clarifying and amplifying the client's experience and significance. The empathy of the therapist has been attributed to the efficacy of MI in the promotion of positive behavior change (Miller, 1996) and the spirit of MI is described as collaborative rather than authoritarian (Rollnick & Miller, 1995). Further, the interventionist heightens the client's perception of self-efficacy and awareness of cognitive dissonance. Although the significance of MI therapist training has been attributed to the positive outcomes of the client (Rubel, Sobell, & Miller, 2000), a certification program is not necessary for its practice; further, Miller and Mount (2001) articulate that MI skillfulness takes more than a one-time workshop.

Until recently, the focus of MI studies has primarily been adults (Nage, 2010); however, MI has been used in a variety of settings including schools, juvenile justice settings, and emergency rooms in consideration of adolescents (Feldstein & Ginsburg, 2006). Nevertheless, Jensen, Cushing, Aylward,

Craig, Sorell & Steele (2011) maintain that their meta-analysis was the first study of its kind to focus on adolescents as a treatment population.

Motivational Interviewing-via-Co-Active Life Coaching (MI-via-CALC)

CALC has been described as a “truly holist approach designed to address the client’s whole life, at every level of consciousness” (Longhurst, 2006, p. 62). The founders of CALC, Laura Whitworth and Karen and Henry Kimsey-House (1998), base their model of coaching on the belief that the client is “naturally creative, resourceful, and whole” (Whitworth et al., 1998, p. 3), meaning that the client does not need fixing and holds all of the answers that are being sought. The client’s whole life is addressed; from this notion emanate the three fundamental and dynamic principals of co-active coaching – fulfillment, balance, and process. The client, being in charge of decisions and actions, sets the coaching agenda. The coach is positioned to listen, ask, be intuitive, remind, and be naturally curious about the client. While holding the client’s agenda, the coach follows the client’s lead. The “coach and client work together to clarify goals as well as develop strategies for achieving them” in CALC (Kimsey-House, Kimsey-House, & Sandahl, 2011, p. 25).

In order to effectively employ the standardized tools and methods of CALC, coach training is rigorous, extensive, and time consuming: to be a Certified Professional Co-active Life Coach (CPCC), five comprehensive training sessions, a six month certification program, and successful completion of oral and written examinations are required.

MI-via-CALC refers to the tenets of MI coupled with the methodology of CALC (Newnham-Kanas, Morrow & Irwin, 2010; Pearson, Irwin, Morrow, Battram & Melling, 2013).

Literature Search

To augment the rigor of the ILR, a well-defined approach to the literature search is essential (Whittemore & Knafl, 2005); to that end, the following strategies were advanced.

Sampling Frame

A comprehensive literature search using psychological, educational and medical databases was conducted to collect past pertinent research of motivational interventions for adolescent risk behavior. Specific databases included in this search were PsychINFO, ERIC, and CINAHL. Additionally, a Boolean strategy for abbreviated and full keywords was employed. Due to the two fold purpose of this ILR, two distinct searches were completed as follows. To address the first question of this review, search words included *motivational AND interview OR intervention AND at risk adolescent or teenager*. The initial search yielded 27,141 articles. Additionally, a search was conducted to uncover information concerning the second question of this review; that is, what is the current research on MI-via-CALC as an intervention for positive behavior change in adolescent risk behavior. Search words included *adolescents AND co-active coaching OR co-active life coaching AND at risk youth OR risky behavior*. This search yielded 0 results. The search was then extended to an advanced search of the Western University Library. Search words included *adolescent risk behavior AND co-active life coaching*; again, the search yielded 0 results with no limiters. The search was then extended to *co-active life coaching*. Additionally, an ancestry approach to literature searching, a technique recommended for an ILR (Russell, 2005), was utilized to find research articles through an investigation of the reference lists of other pertinent articles and reviews.

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Inclusion and Exclusion Criteria

Studies were included if MI or MI-via-CALC was used as a sole intervention or as an adjunct to another treatment. Studies focused on adolescents between the ages of 12 and 19 years, who had no comorbidities. Furthermore, studies were included if they were peer reviewed and published in English between the years 2000 and 2013. Empirical and theoretical literature was included (Cooper, 1998) (Ganong, 1987) (Whittmore & Knafl 2005).

Studies that incorporated a sample of adolescents and other-aged participants were excluded from the review of MI as an intervention for positive behavior change. Studies that investigated MI-via-CALC as an intervention were not excluded if they involved adults; in fact, the search was extended to all ages, due to the lack of studies comprising adolescents. Further, studies were not excluded if they did not include risk behaviour as delineated previously. Additionally, studies that involved participants with cognitive impairments or learning exceptionalities were excluded from both searches, as the endeavor of this review was to establish the suitability of the intervention with those who could fully comprehend the process. Studies that involved group interventions exclusively were included in this review.

The result of the first literature search yielded 14 articles. Careful deliberation was given to the suitability of each article, and further articles were reduced because of single sex sample sets and lack of descriptive detail. Additionally, studies that did not include at least a three-month follow-up were excluded. The final result of the literature search produced 10 research articles involving MI and eight research articles involving MI-via-CALC.

Data Evaluation

The synthesizing of literature in an ILR is creative, and presents an innovative perspective of previous research; the reviewer “weaves the streams of research together to focus on core issues rather than merely reporting previous literature” (Torraco, 2005, p. 362). Further, the researcher endeavors to present a unique interpretation or abstraction of the literature under study; the purpose of the synthesis is to develop a new element to existing theory, or provide stronger evidence of something, or an assertion for further study (Whittemore & Knafl, 2005; Zimmer, 2006). In this ILR, a priori research about MI and CALC as interventions to positive behavior change was examined for inclusion and exclusion criteria, and for relevance to the interests of the researcher. Due to the aggregative interest of this review, the data was analyzed using inductive content analysis; that is, the researcher’s experience in collecting and analyzing the data shaped the emerging themes and focus of the literature (Creswell, 2007).

Findings

Motivational Interviewing (MI)

Selective coding led to the following themes that emerged from the data:

Theme 1: MI Treatment Fidelity and Counselor/Client Rapport

A collaborative relationship between counselor and client in the MI relationship is the general objective when the goal is to augment the intrinsic motivation of the client (Miller & Rollnick, 2002). Further, genuine empathy of the therapist is integral to the efficacy of MI to positive behavior change (Miller et al., 1980), as is a shared rather than a dictatorial approach (Rollnick & Miller, 1995). The literature of this review revealed moderate variations in the findings regarding MI effectiveness; conjecture

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that this may have been due to the quality of the counselor-client relationship is in keeping with the preceding discussion. Data was coded for the theme of treatment fidelity and counselor/client rapport.

In their study of MI as a solution-focused intervention for reducing truancy, Enea and Dafinoiu (2009) studied nineteen 16 to 17 year olds. The researchers found that the “quality of counselor-client relationship in the first session was a good predictor for the students staying in the program and for the final result of the counseling process” (Enea & Dafinoiu, 2009, p. 194). Grenard, Ames, Wiers, Thush, Stacy & Sussman (2007) concurred in their study of the feasibility of administering brief intervention to at-risk adolescents who engaged in drug use. The treatment participants met with one of two interventionists for 25-minute MI sessions. When asked in an evaluation questionnaire if they would be willing to talk with the interviewer again, the participants provided positive responses. Grenard et al. acknowledged that reduction of drug use among the members of the control group might have been ascribed to the interview, enhancing a priori theory that the efficacy of MI to promote positive behavior change was due to the competencies of the interviewer (Miller, Taylor & West, 1980).

On the other hand, Baer et al. (2007), in their study of intervention to positive behavior change in drug usage by homeless adolescents, found that the impact of MI was “not robust” (p. 585); however, counselors provided positive ratings regarding the development of rapport with participants. Further, the study indicated that John Baer, researcher, who reviewed audiotapes of the sessions for treatment fidelity, trained the counselors in MI. Unclear, however, were the level of training and the skills of the three master’s-level counselors. Additionally, of the 66 youth assigned to treatment, only 31 completed all four sessions of the RCT. This may have contributed to the lack of effect of MI as a motivational intervention. Addressing the fidelity of treatment in their study, Audrain-McGovern et al. (2011) commented that values were “less than ideal on two fidelity metrics, [which] slightly reduced the confidence” (p. 110) of their findings. Participants who received MI were 60% less likely to try to quit smoking than the comparison group who received structured brief advice; however, MI treatment focused on cigarette reduction, not cessation. Perhaps the ambiguity in the findings of these studies was due to insufficient training of the MI interventionists, or to the quit, not reduction, rates.

In their 2005 study of MI as a possible intervention for adolescent cigarette smokers, Colby et al. addressed treatment fidelity and patient ratings of counselor rapport. The researchers described the rigorous training program required of the interventionists; correspondingly, patient ratings of counselor rapport and empathy were high. At the six-month follow-up, patients who received MI treatment reported more motivation to quit smoking than did the comparison group. In a subsequent study, Colby et al. (2012) added a one-week booster telephone session, and a brief parent intervention to enhance MI. (Please see further discussion of parent involvement in the subjective norm section that follows.) The results were consistent with their previous study; that is, the MI respondents reported a significant reduction in the amount of cigarettes smoked in a day. Further, the respondents assigned high ratings to the interventionists, describing them as empathic and helpful. The positive outcome of these studies may be due to the rigorous MI training program for the interventionists, and their consequential ability to establish rapport with the participants.

Similar to the results of the studies by Colby et al. (2005), and Colby et al. (2012), D’Amico et al. (2008) and Knight et al. (2005) found that youth who completed MI reported a reduction in incidents of substance use, driving after drinking alcohol, and consuming alcohol. The latter two studies also provided details about the diligence of the interventionists’ training program and the high ratings by the participants

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regarding their satisfaction with the intervention and the interventionists. In addition, Martin and Copeland (2008) found that the intervention participants of their study reduced their use of drugs by 20 days in a 90-day period. This was compared to a reduction of 1.2 days in the control group. Of particular value in the pursuit of effective adolescent behavior change interventions is the participants' assessment of the intervention as satisfying and useful. The participants also confirmed the non-judgmental and empathic nature of the MI interventionist. Further, Stein et al. (2006) studied 14 to 19 year olds who were incarcerated for driving while under the influence of alcohol or drugs (DUI). The researchers explicated the rigorous training of bachelor and master-level research assistants who administered the MI principles of empathy, discrepancy development, self-efficacy, and personal choice. Subsequent to the treatment, participants highly rated the therapeutic relationship for warmth, ease of discussion and instilling hope. After three months, the MI group showed a reduction of 89.1% in DUI and a 74.2% reduction in being a passenger in a car with someone DUI. The treatment fidelity may account for these findings, and underscores the importance of proper and thorough interventionist training.

In support of the preceding statement, McCambridge et al. described the practitioners of their study as having master's and doctoral level qualifications, thorough MI training and comprehensive workshop sessions. The findings of their study "provide direct evidence that greater fidelity to MI is associated with improvement of brief intervention outcomes" (McCambridge et al., 2011, 753). The researchers expounded that contribution to MI effectiveness depends on "skillful complex reflection and greater embodiment of the MI spirit" (McCambridge et al., 2011, 752). Further, the authors suggested that the null findings in their study were in part due to the lack of reliability in MI fidelity, and recommended that consistently effective MI interventionist would enhance the effects of MI. They clarified, "Practitioners necessarily say and do things differently when delivering MI, and it does matter what exactly they say and do" (McCambridge et al., 2011, p. 753).

Furthermore, Jensen et al. (2011) completed a unique meta-analysis in that it focused on effectiveness of MI interventions for adolescent substance use behavior change. The authors asserted that comparability of treatment outcomes from MI studies is difficult because they "have suffered from poor treatment fidelity" (Jensen et al., 2011, p. 439) and only 23.8% of the reviewed studies reported fidelity assessments. The authors found that, notwithstanding this limitation, MI as an intervention for adolescents "produced small but significant effect sizes across numerous substance use outcomes" (Jensen et al., 2011, p. 438). To address the problem of treatment fidelity in research studies of MI, O'Leary-Tevyaw and Monti (2004) developed a method to evaluate and monitor fidelity; they also provided training and supervision for treatment providers. As previously stated, however, MI interventionists are not required to complete standardized training (Newnham-Kanas et al., 2010); therefore, threat to treatment fidelity is further exacerbated by a lack of consistent preparation of the MI practitioner (Miller & Rose, 2009).

In conclusion, the studies that reported positive results of MI as an effective intervention for behavior improvement supported the determination of McCambridge et al. (2011) to the significance of interventionist mastery of the MI techniques by Miller and Rollnick (2002).

Theme 2: Perceived Self-Efficacy

Miller and Rollnick (2002) stress the importance of client perception of self-efficacy in the ideologies of MI counseling; the principle of self-efficacy is related to confidence, which is a critical requirement for change. Additionally, fostering perceived self-efficacy in adolescents is important to promoting self-esteem and motivation to disengage from problem behavior (Jessor, 2001). Although an

important standard of MI counseling, only five of the ten studies included in this review particularized reference to client self-efficacy beliefs.

In support of the previous statement, the studies that referred to self-efficacy will be discussed further. For example, Audrain-McGovern et al. measured self-efficacy by comprising eighteen self-report items to assess the respondents' feelings about typical situations that trigger the desire to smoke. The responses to the self-report were used to measure motivation to change smoke behavior; however, discussion about self-efficacy as a counseling application was lacking in the study. Conversely, in their outline of the MI procedures used in their study, Colby et al. (2005) provided details for the interventionist about increasing self-efficacy. Their comprehensive manual for interventionists conveyed a therapeutic guide for "establishing rapport; exploring pros and cons; personalized feedback; imagining the future; setting goals; and increasing self-efficacy" (Colby et al., 2005, p. 866). Interventionists were instructed to support participants in augmenting their perception of self-efficacy by encouraging reflection of previous success in achieving change, and considering personal characteristics that fortified the accomplishment of change. This facilitation, along with the treatment fidelity and training of interventionists, may account for the high ratings by participants of self-efficacy enhancement and ultimately for the positive ratings of MI as an effective behavior change intervention.

Parallel to the previous study, Colby et al. explained their aim to examine "quitting self-efficacy" (Colby et al., 2012, p. 818). In this recent study of MI compared to brief advice (BA) for adolescent smoking cessation, satisfaction ratings by both groups revealed that the MI participants evaluated their experience as more effective in increasing quitting self-efficacy than did those in the BA group. Further, the MI interventionists were rated as more empathic and helpful than the BA interventionists. Contrary to the researchers' expectations, however, results of the study revealed, "MI did not lead to increased motivation or quitting self-efficacy" (Colby et al., 2012, p. 822). The researchers did clarify that groups were highly motivated to change their smoke behavior at baseline, and that the ceiling effects may explain lack of change.

Stein et al. (2006) incorporated the principles of MI, including self-efficacy, in the protocol of their study. They compared a randomly selected group who received MI with a randomly selected group who received relaxation therapy (RT). After the interventions, the participants were asked to assess the core components of the intervention; that is, perceived rapport, empathy and self-efficacy. Adolescents assessed the occurrence of perceived self-efficacy during the MI intervention as positive, and rated MI significantly higher for "warmth, ease of discussion, and instilling hope" (Stein et al., 2006, p. 53) than the comparison group who received RT.

In their study involving truant adolescents, Enea and Dafinoiu (2009) illuminated the importance of self-efficacy to MI, stating that it promotes motivation to change and predicts treatment results. Although the researchers reported a significant decrease in the occurrence of truant behavior in the experimental group when compared to the control group, they omitted detail about the participants' perceived self-efficacy as a result of MI intervention.

In conclusion, of the ten studies integrated in this review, five discussed self-efficacy as an important principle of MI, and an integral mechanism to positive behavior change. Focus on the past successes of adolescents, along with their strengths and confidence, may contribute to the success of MI as an intervention to thwart at-risk behavior.

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Theme 3: Subjective Norm/Parental Reinforcement

Direct reinforcement of others has a powerful impact on goal attainment (Ajzen, 1988); further, adolescents are more prone to engage in risk behavior when parent disapproval is low, or parental control is lacking (Jessor, 2001). Because of the influence of the subjective norm and parental reinforcement, this integrative literature review selectively coded for evidence of this focus in the MI studies.

In the study by Audrain-McGovern et al. (2011), white adolescents, when compared to black adolescents, were found to be 80% less likely to attempt to reduce smoking. The researchers attributed this to a greater disapproval of smoking and emphasis to quit among black parents. This may be an example of the influence of subjective norm on adolescents' intention to change, albeit a contradiction of the characteristic teen need for "autonomy and respect for choices" (Audrain-McGovern et al., 2011, p. 107); nevertheless, important questions are raised about these findings and why black adolescents were more likely to change their smoking behavior when compared with white adolescents.

Also, results of the study by Baer et al. (2007) involving homeless adolescents showed that the impact of MI was not robust, suggesting that parent estrangement diminished the reinforcement of the subjective norm, which in turn lowered motivation to change behavior among this group of at-risk youth. Additionally, when studying MI as an intervention for adolescent truancy reduction, the researchers noted a "lack of parents' participation [and] the limited involvement of teachers" (Enea & Dafinoiu, 2009, p. 196). This study specified that truancy rates decreased by 61% in the experimental group, who were involved in counseling sessions for one hour per week for eight weeks. Perhaps the duration of the counselor relationship had an effect on the influence of subjective norm to insight behavior change; the counselor may have been construed as a proxy parent when the actual parent was disengaged. Addressing this point, the authors recommended that "a greater involvement of parents, class teachers, and teachers in the program" (Enea & Dafinoiu, 2009, p. 196) should be emphasized in future studies.

To explore the effect of the subjective norm vis-à-vis parents of adolescent smokers, Colby et al. (2012) asked the parents of participants to support their adolescent child's goals to change smoking behavior. MI principles were outlined for parents, and they were encouraged to increase communication, create rules for restriction of smoking in their home, and reinforce the efforts of their child to change. Unexpectedly for the researchers, was the finding that the parents of MI participants, when compared to the parents of the brief advice (BA) group, were less restrictive with rules, showed less disapproval of smoking, and had less frequent discussions about the consequences of smoking. The researchers hypothesized that this may have been because parents were informed of "MI's emphasis on supporting the adolescent's personal choice and responsibility for behavior change" (Colby et al., 2012, p. 822), which may have thwarted parental reinforcement of positive behavior change regarding smoking.

Martin and Copeland (2008) found that the study participants of their randomized trial of MI for adolescents using marijuana valued the MI intervention, albeit after the majority said that they had been "asked or coerced by parents, school, or another agency" (p. 410). The positive findings regarding MI as an effective intervention for behavior change may be attributed partly to the subjective norm; the participants were aware of the interest of concerned others in their positive behavior change toward substance use.

In summary, the subjective norm has a powerful impact on attitude and intention to change problem behavior, and positive parental influence is important during adolescence. Training parents to effectively apply MI intervention may be a worthwhile consideration for supporting positive behavior change.

Motivational Interviewing-via-Co-Active Life Coaching (MI-via-CALC)

Because of the lack of research involving MI-via-CALC in promoting behavior change in at-risk adolescents, this ILR focused on the applicability of the a priori research involving an older than adolescent sample group who were not engaging in earlier depicted at-risk behaviour.

MI-via-CALC includes the principles of MI and the theoretical backing of Social Cognitive Theory, the Theory of Reasoned Action, and the Theory of Planned Behavior (Irwin & Morrow, 2005). Additionally, the specific approach of MI-via-CALC to behavior change has been evidenced through clinical research to be effective in the advancement of positive personal behavior change (Mantler, Irwin & Morrow, 2010; Newnham-Kanas, Irwin & Morrow, 2008; Newnham-Kanas, Irwin & Morrow, 2010; Newnham-Kanas, Irwin & Morrow, 2011; Newnham-Kanas, Irwin, Morrow & Bettram, 2011; Pearson, Irwin, Morrow, Battram & Melling, 2013; Pearson, Irwin, Morrow & Hall, 2012; van Zandoort, Irwin & Morrow, 2009). For these reasons, MI-via-CALC is of particular interest as a potential mechanism for positive behavior change in adolescents.

In a mixed-methods study to explore the obstacles to cessation of smoking in 19 – 23 year olds, Mantler et al. (2010) assessed the effectiveness of MI interventions through co-active coaching (MI-via-CALC). The researchers were conscious of the inconsistencies of MI in promoting behavior change, highlighting the concern of Hettema, Steele & Miller (2005) and Mesters (2009), that health care professionals are expected to practice the principles of MI without receiving adequate training, and link this concern to the “inconsistencies of MI in promoting behavior change” (Mantler et al., 2010, p. 50). The researchers underscored the intense training that is involved in becoming a CPCC as a possible explanation to the shortcomings of MI as an effective method for behavior change.

The results of this study reveal that participants, after taking part in nine 30-minute MI-via-CALC sessions over three months, were impacted positively by the experience. Affirmative gains were evidenced “in terms of cigarette dependency, average number of cigarettes smoked per day, self-efficacy, self-esteem, and smoke cessation” (Mantler et al., 2010, p. 60). This study illustrates the promising potential of MI-via-CALC to enhance motivation through increased self-efficacy in order to affect behavior change.

Additionally, the efficacy of MI-via-CALC was tested as a treatment for adults with obesity (Newnham-Kanas, et al., 2008; Newnham-Kanas, et al., 2011; Newnham-Kanas, et al., 2011). The 2008 study set out to evaluate the impact of MI-via-CALC on self-efficacy, self-esteem, and waist circumference and body mass index of twenty 35 – 55 year old men and women. Although the participants of this research differ significantly from adolescents, the context of health behavior vis-à-vis co-active coaching is of particular interest. This mixed-method study measured the outcomes of the MI-via-CALC experience in relation to positive behavior change in the participants. The quantitative results presented a significant reduction in waist circumference and an increase in physical activity and healthy eating habits (Newnham-Kanas, et al., 2008).

The qualitative findings produced themes that revealed an increase in optimism regarding a move to healthy life choices, and an enhancement of self-acceptance. The subjects were also affirmative of their

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experiences while engaging in co-active coaching (Newnham-Kanas, et al., 2008). In their analytic study of CALC, Irwin and Morrow (2005) identified it as grounded in the theoretical constructs of Bandura's Social Cognitive Theory. They further expounded, "A client who receives positive encouragement and support about her new health-related behavior by a respected other is likely to experience an elevation in self efficacy" (Irwin & Morrow, 2005, p. 33). This additionally supports the premise of intention and the influence of subjective norm whereby the attitude of the individual and the perceived attitude of others regarding ability to achieve change are critical to realization of goals (Irwin & Morrow, 2005). The deduction of Newnham-Kanas, et al. (2008), at the conclusion of their study, uncovered the potential of MI-via-CALC to promote healthy lifestyle choices and enhance self-efficacy and self-esteem. Similarly, in a qualitative study of eight women aged 35 to 55 years struggling with obesity (Newnham-Kanas, et al. (2011), and a corresponding quantitative study (Newnham-Kanas, et al. (2011), the authors noted the facility of MI-via-CALC as positive reinforcement of self esteem, efficacy, and confidence. These conclusions give credibility to the usefulness of the MI-via-CALC model to the promotion of positive life choices in at-risk adolescents.

Further mixed methods research on the impact of MI-via-CALC as an intervention for obesity was conducted on five female university students, aged 17 to 24, who participated in nine, 35 minute, one-on-one sessions with a certified coach (van Zandvoort, Irwin & Morrow, 2008). The qualitative data that emerged from this study revealed that co-active coaching facilitated in the improvement of self-esteem and self-acceptance. The study additionally uncovered an enhancement in physical, mental and overall health as described by the participants at the conclusion of their involvement in this research. Similarly, Pearson et al. (2012) and Pearson et al. (2013) assessed the efficacy of MI-via-CALC and one other self-management approach on obesity in 18 to 24 year olds; the findings of the studies revealed the fittingness of both approaches to this population, the potential for enduring behaviour change, and emphasized the importance of client-centered approaches.

Most significant to the interest of discovering the potential of MI-via-CALC in enhancing self-efficacy in at-risk youth are the reflections of the study participants to the coaching experience. The researchers noted, "two participants spoke specifically to experiencing enhanced self-esteem, and all five participants indicated having improved self-acceptance" (van Zandvoort et al., 2008, p. 20). These findings are congruent with the results of the previously referenced studies, and point to positive personal growth and self-acceptance following an intervention involving MI-via-CALC.

Conclusion

Adolescence is a time of challenge and transformation; during this transition from childhood to adulthood, teens face many obstacles that they must overcome. Most adolescents manage to navigate their way around the impediments, but some encounter the detrimental results of poorly made decisions. Engagement in perilous behaviour can lead to negative outcomes that are short lived, long lasting, or fatal. Drug and alcohol use, risky sexual behavior, exposure to weapons and violence, and disengagement from school destabilize the physical and emotional health of youth. Approaches that facilitate the efforts of adolescents to realize success are needed.

Teens desire guidance without being told what to do; they want to be supported, respected, and heard. MI offers potential as an intervention for positive behavior change in adolescents who engage in risk behavior. Its method appeals to the adolescent desire for autonomy and independence; however, the first

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section of Findings in this ILR showed varied results. This may be due to intervention variations, and point to the need for standardized training and perhaps certification of practitioners of MI. From the results of the studies included in this review, it appeared that a greater level of success by participants to positive behavior change correlated to a greater fidelity of treatment. Extrapolation from this leads to concern regarding the inconsistent training and knowledge of interventionists who venture to practice MI. Better interventionist training and understanding of MI methods will help to ensure heightened quality and reliability in the proficient application of this intervention.

This study also intended to investigate the potential of MI-via-CALC as a motivational intervention in the facility of perceived self-efficacy and positive behaviour change in at-risk adolescents. The results of a priori studies showed that the method and delivery of MI-via-CALC has a positive impact on self-efficacy and self-esteem of adult participants. Further, the results of the included research articles reinforced the importance of the subjective norm and the recognition that the attitude of others toward the person who wants to change is critical to realization of goals. MI-via-CALC as an intervention for adolescents may be significant because of its characteristic facility to perceived competence in goal actualization and support from caring others. Additionally, the consistency of intense training that is required to be a CPCC and to practice MI-via-CALC is an important and unique feature of this intervention. The confident and systematic approach of the CPCC practitioner may address cognitive dissonance, and lead to positive behavior change in adolescents.

The awareness of gaps in research about the adolescent experience of MI-via-CALC calls to action interested researchers who wish to glean gainful information from studies with this focus. MI-via-CALC may be a worthwhile approach to enhance motivation, self-efficacy, and positive behavior change in adolescents who have been deemed at-risk. This review amplifies the need to develop an innovative, substantive theory about MI-via-CALC as a useful motivational intervention for adolescents. Qualitative research studies of adolescent and parent perspectives of MI-via-CALC as a behavior change intervention, and observed CPCC/adolescent interaction, are needed to determine the impact of the experience. Cultivating self-directedness should be a joint venture of adolescents and the society in which they belong (Bandura, 1989), and MI-via-CALC may prove to be a valuable intervention in this combined interest.

Limitations

Although treatment fidelity was addressed in all of the articles, the degree to which it was covered varied. This limits the study's ability to fully evaluate the influence of motivational intervention. Secondly, the qualitative approach to this ILR may introduce some degree of bias. The potential of MI and MI-via-CALC as positive behavior change, treatment fidelity, the perception of practitioner/client relationship, potential for augmenting self-efficacy, and the importance of subjective norm have been the concentration of this review; consequently, further themes that may have been developed were unnoticed. Finally, a lack of research about adolescents and MI-via-CALC required conjecture, hypothesis, generalizations and speculation about its potential as a change mechanism for at-risk youth.

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